What is claimed is:

1. A plasma confining assembly for minimizing unwanted plasma formations in regions outside of a process region in a process chamber, comprising:

a first confining element positioned proximate the periphery of the process region, and including an exposed conductive surface that is electrically grounded; and

a second confining element positioned proximate the periphery of the process region, and including an exposed insulating surface, which is configured for covering a conductive portion that is electrically grounded, the second confining element being spaced apart from the first confining element,

wherein the first confining element and the second confining element substantially reduces the effects of plasma forming components that pass therebetween.

2. The plasma confining assembly as recited in claim 1 further including a third confining element formed from an insulating material and disposed between the first confining element and the second confining element, and proximate the periphery of the process region, the third confinement element being arranged to physically contain a plasma inside the process region and to substantially reduce the effects of plasma forming components that pass between the first confining element and the second confining element.

3. The plasma confining assembly as recited in claim 2 wherein the third confining element is a ring that surrounds at least a portion of the process region, the third confining element being configured to permit by-product gas from the processing to pass through while substantially confining the plasma inside the process region.

4. The plasma confining assembly as recited in claim 1 wherein the plasma forming components are charged particles or electric fields.

5. The plasma confining assembly as recited in claim 4 wherein the first confining element and the second confining element are arranged to direct charged

12. The plasma confining assembly as recited in claim 11 wherein the non-exposed conductive core is formed from aluminum and wherein the exposed insulating surface is formed from anodized aluminum.

13. The plasma confining assembly as recited in claim 1 wherein the conductive surface of the first confining element is formed from an electrically conducting material that is either substantially resistant to etching by a plasma present within the chamber during the processing or contributes substantially no metal contamination.

14. A plasma reactor for processing a substrate, comprising:

a chamber having chamber walls;

an electrode arrangement configured for generating an electric field, which is sufficiently strong to both ignite and sustain a plasma for the processing within the chamber, the arrangement comprising a first electrode and a second electrode which is spaced apart from the first electrode, the first electrode and the second electrode defining a process region therebetween; and

a plasma confinement assembly for preventing the plasma from forming outside of the process region, the plasma confinement assembly comprising a first ring, which is configured to surround the first electrode, and a second ring, which is configured to surround the second electrode, the first ring including an exposed conductive surface that is electrically grounded, the second ring including an exposed insulating surface covering a non exposed conductive element that is grounded,

wherein the plasma confinement assembly substantially reduces the effects of plasma forming components that pass between the first confinement ring and the second confinement ring.

15. The plasma confining assembly as recited in claim 14 further including a pressure control ring formed from a dielectric medium and disposed between the first and second rings, the pressure control ring being configured for physically confining a plasma within the process region, while permitting the passage of process gases to pass therethrough.

particles to the exposed conductive surface and sink charged particles therethrough to ground so as to reduce the density of charged particles in regions outside of the process region.

6. The plasma confining assembly as recited in claim 4 wherein the first confining element and the second confining element are arranged to attract electric fields to the grounded conductive surface and the grounded conductive portion, respectively, so as to reduce the electrical field strength in regions outside of the process region.

7. The plasma confining assembly as recited in claim 1 wherein the first confining element is disposed in an upper portion of the process chamber, and wherein the second confining element is disposed in a lower portion of the process chamber.

8. The plasma confining assembly as recited in claim 7 wherein the first confining element is a ring that surrounds an upper electrode, and wherein the second confining element is a ring that surrounds a bottom electrode, the upper and bottom electrode being arranged for producing an electric field that helps to ignite and sustain a plasma.

9. The plasma confining assembly as recited in claim 1 wherein the first confining element is disposed in a lower portion of the process chamber, and wherein the second confining element is disposed in an upper portion of the process chamber.

10. The plasma confining assembly as recited in claim 9 wherein the first confining element is a ring that surrounds a bottom electrode, and wherein the second confining element is a ring that surrounds an upper electrode, the upper and bottom electrode being arranged for producing an electric field that helps to ignite and sustain a plasma.

11. The plasma confining assembly as recited in claim 1 wherein the second confining element includes a non-exposed conductive core, which is at least partially covered by the insulating surface, and which is grounded.

16. The plasma reactor as recited in claim 14 wherein the first electrode and the second electrode are parallel to one another, and wherein the exposed insulating surface is level with a top surface of the second electrode.

17. The plasma reactor as recited in claim 14 wherein the first ring is disposed between the first electrode and the chamber wall, and wherein the second ring is disposed between the second electrode and the chamber wall.

18. The plasma reactor as recited in claim 14 wherein the first ring includes an inner ring and an outer ring, wherein the inner ring is formed from a dielectric medium and disposed between the first electrode and the outer ring, and wherein the outer ring includes the conductive surface, which is grounded.

19. The plasma reactor as recited in claim 14 wherein the second ring includes an inner ring and an outer ring, wherein the inner ring is formed from a dielectric medium and disposed between the second electrode and the outer ring, and wherein the outer ring includes a conductive core, which is covered by the insulating layer, and which is electrically grounded.

20. The plasma reactor as recited in claim 14 wherein the conductive element is a portion of the chamber.

21. The plasma reactor as recited in claim 14 wherein the first ring and the second ring extend in a radial direction relative to an axis of the process chamber, and wherein an outer edge of the first ring extends further than an outer edge of the second ring.